Grand Blanc High School Robotics Team
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Advanced Level Deliverables
Melon Chuckin' Challenge

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Mentor(s) to ask if you have questions about this Challenge: Clinton Bolinger, Brandi Bolinger or Cathy Fillwock

Challenge Information:

1. The competition for this Deliverable will take place at *The Team Member, Partner and Alumni BBQ*. Check the Team Calendar for updates on date and time.
2. If you are not able to participate on the actual day of the event, you may still participate with a Team and complete this deliverable for credit.
3. Each Student will choose a Team to compete with during this competition:
    a. A Team sign-up will be available on the Team's VEX Website for this season.
    b. Students may only sign THEMSELVES up to participate in this event.
    c. Each Team should – COLLECTIVELY – come up with an APPROPRIATE Team Nickname.
    d. Teams are encouraged to develop a Team Image and theme for their machine.
    e. Teams wishing to develop a Team Uniform may do so with their own funds and resources.
4. Initial-Level Students are ENCOURAGED to participate in this challenge. Advanced-level Students should be actively recruiting new Team Members to join their group:
    a. Engineering Notebook entries for Initial-Level Students participating in this Deliverable is not required, although highly recommended.
    b. Initial-Level Students may choose a Team and sign up on the online document.
    c. Initial-Level Students may also choose to participate in this challenge as an observer.
5. Materials will be restricted to the following items from the Team's SCRAP bins. If you're not sure if an item is scrap, ask Clinton before using it. *Remember: everything is scrap, it's just a matter of when.*
    a. Suggested items include:
        i. Wood
        ii. PVC
        iii. Surgical Tubing
        iv. Screws, nails, and other fasteners
        v. Any item(s) from the "Prototyping Materials" bin in the back room
6. NO MATERIALS may be purchased for this Deliverable, unless approved by Clinton or Brandi, with the exception of:
    a. Wood Screws
    b. Nails
7. Groups may begin work on this project as early as desired, and will have up until the day of the competition to complete work.
8. Students should encourage their Parents, Mentors and Partners to participate in this event. The more machines that are built, the more fun we'll all have.

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Challenge Instructions:

1. The main purpose for this Deliverable is for Team Members to have fun *while* learning about prototyping methods. So seriously, have fun, and be safe.
2. Each Team is tasked with the challenge to design, prototype, build and test a machine that will throw, propel or launch a watermelon the greatest distance.
3. Safety should ALWAYS be taken into consideration. Safety Glasses and closed-toe shoes must be worn at all times while working on machines or with tools.
4. Each Team will participate in a competition bracket during the *Team Member, Partner and Alumni BBQ*
    a. Winners will be determined based on greatest distance achieved upon initial impact with the ground.
    b. Each Team will receive two opportunities to "chuck" a watermelon, and will be ranked according to the distance of each throw.
5. Watermelons will be between 8-12 inches in diameter, and weigh varying amounts.
6. Students will be expected to WORK TOGETHER to come up with and execute a collaborative design that effectively achieves the challenge instructions.
7. Teams may be interviewed by our Team's Partners or Parents at the *Team Member, Partner and Alumni BBQ,* so all participants must have an up-to-date Engineering Notebook and be ready to answer any questions about the machine or Team.
    a. Hand-outs, posters and other advertisements are not required, but encouraged.
8. The winner(s) of this event may go on to face the winning Team of the Alumni Bracket in a head-to-head battle at the *Team Member, Partner and Alumni BBQ.*

Engineering Notebook Instructions:

Your responses do not need to be lengthy, but you need to write legibly and use complete sentences. Bullets may be used as a form of response.

BEFORE THE COMPETITION:

Each Student will be responsible for documenting the following processes in his/her Engineering Notebook:

a. Strategy
b. Design Phase
c. Prototype Phase
d. Testing Phase
e. Design Iteration

2. Suggestions for documentation:
    a. Drawings
    b. Charts/graphs
    c. Tables
    d. Photographs
    e. Topics of discussion
    f. Reasoning for decisions

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AFTER/AT THE COMPETITION:

Please copy down and legibly write responses to the following questions:

1. What improvements could you make to your machine to make it more competitive and/or robust?
2. What is the most valuable thing you learned throughout the course of this Deliverable?
3. What was your most favorite part of this deliverable?
4. What was your least favorite part of this deliverable?
5. Feel free to add any additional information you'd like to provide. ☺
6. If you created any handouts or displays, please include a copy of the information or a picture.
7. Please take a photo of your Team with your machine, and paste it in your notebook.

Clean Up your Area:

1. Ensure all extra materials have been put away,
2. Put all tools away IN THE TOOL BOX,
3. Sweep the floor in the area you were working,
4. If you used any of the tools in the wood shop, please clean them and sweep the counters/floor around them,
5. Assist Alumni, Parents and Partners (who participated in the event) with putting away materials and tools,
6. Assist with cleanup outside.

To Complete Your Challenge:

1. Ensure that your area has been cleaned ***thoroughly***.
2. Ensure that your Engineering Notebook entry is complete.
3. Find one of the Mentors listed on this deliverable and present him/her with your Engineering Notebook to inspect your completed work.
4. Ask one of the Mentors listed on this deliverable to approve your Engineering Notebook entry and have your deliverables checklist validated.